#### Instructions for use of OH-N-531-CAD

- This is the Ohio Plank Wall Standard Drawing. Updated/redrawn by Greg Wells in April 2014. Title Block information was removed for posting to the web site in June 2015.
- This drawing is intended to be used in conjunction with OH-N-203-CAD (Concrete Slab Details).
- The drawing contains several layout tabs, which can be selected to fit your situational need.
- The first "Basic Layout" contains all the necessary Plank Wall Details, with an open/blank area at the lower right corner of the drawing. This area is reserved for a plan view of your specific post layout or can be used for other details as needed.
- The "Layout w Drain" tab contains all the Plank Wall Details and the lower right corner shows a detail for installing a perimeter drain around the structure to address high water table. This detail also shows backfill to 2/3 of wall height.
- The "Layout w Gate" tab contains all the Plank Wall Details and the lower right corner shows the standard detail for a manure storage gate. This would be used on structures built with all four sides enclosed with plank walls and an opening(s) for entrance to the structure for manure removal.
- The "Layout w Picket" tab contains all the Plank Wall Details and the lower right corner shows the standard detail for a picket type wall, used for bleeding liquid from the storage.
- The last two layouts show the Manure Gate and Picket Wall details separate from the rest of the drawings. The two details are available from the CADalog as details to be used in other drawings as needed.

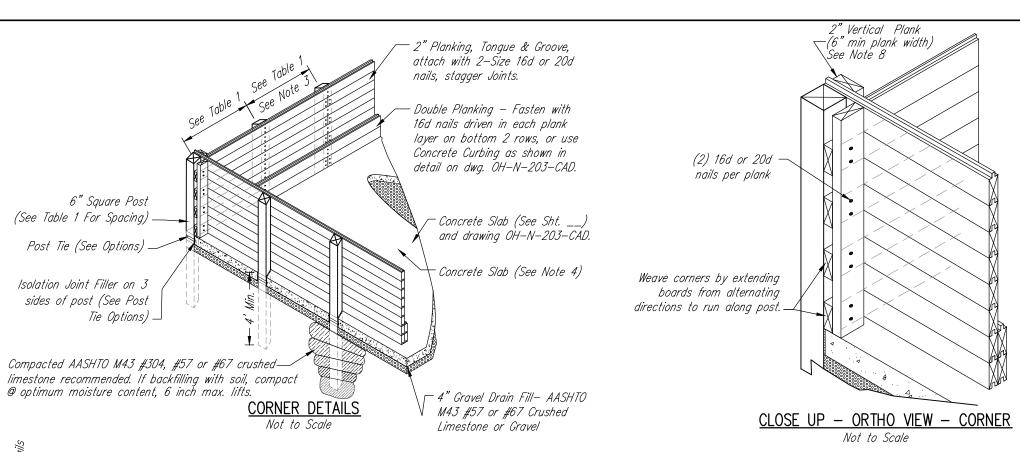


TABLE 1 — MAXIMUM WALL HEIGHT FACILITIES WITHOUT A ROOF			Select Scenario
MAXIMUM POST SPACING MAXIMUM WALL HEIGHT, h (FT.)			to Use:
6"x 6" No. 1 & 6"x 8" No. 2	Manure*	Compost*	(X)
2.5	<i>5.5</i>	<i>5.5</i>	
3.0	5.0	5.5	
4.0	4.5	<i>5.5</i>	
4.5	4.0	<i>5.5</i>	
5.0	3.5	<i>5.5</i>	
6.0	2.5	4.5	
6" x 6" No. 2	Manure*	Compost*	
2.5	4.7	5.5	
3.5	4.5	5.0	
4.0	4.0	5.0	
<i>4.5</i>	4.0	4.5	
5.0	3.5	4.5	
6.0	2.5	4.0	

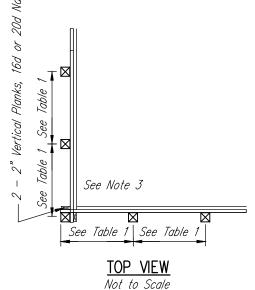
\* Note: Manure loading = 60 lbs. / Cu.Ft. Compost loading = 35 lbs./Cu.Ft.

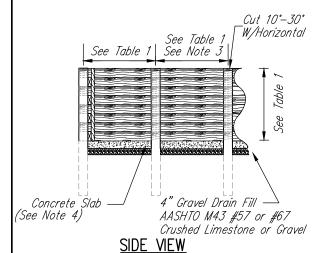
For roof spans <32'

For roof spans >32'

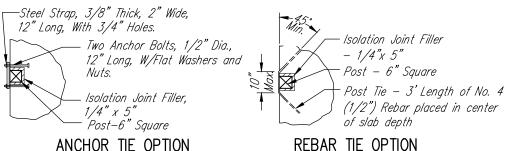
\* Note: For roofed structures, maximum wall heights are as follows:

<u>Manure</u> <u>Compost</u> 4.5' 5.5' 5.0' 4.0'





Not to Scale



## REBAR TIE OPTION

Post Tie Option is <u>not</u> required for roof-supporting posts.

## POST TIE OPTIONS

Not to Scale

#### **CONSTRUCTION NOTES:**

- All posts shall be grade stamped No. 2 or better (See Table 1), 0.6 Pounds per Cubic Foot retention Chromated Copper Arsenate (0.6 PCF CCA), Southern Yellow Pine (S.Y.P.). [All other lumber No. 2 or better, S.Y.P., 0.4 PCF CCA., and all fasteners shall be galvanized.
- 2. If any other ACQ or MCQ type Preservative Treatment is used, then retention rates shall be the equivalent as for CCA, but all fasteners shall be hot dipped galvanized or stainless steel.
- 3. Table 1 is for solid tongue and groove plank walls, manure loading at 60 PCF and compost at 35 PCF. Any changes must be approved by the State Conservation Engineer.
- 4. See NRCS "Concrete" Construction Specification, 210-VI-Engineering Field Handbook, Exhibit 0H17-1 for concrete slab requirements.
- 5. Maximum inside height of wall shall be 5.5 feet. Back fill optional, maximum height = 2/3h.
- 6. Post ties are not required when back filling to 2/3 the wall height, h. Post ties are required on all wall posts, included corner posts.
- 7. All plank joints shall be 2" nominal thickness, stagger joints.
- 8. For corner assembly, saw tongue off horizontal planks to merge at post. Vertical plank width shall match width dimension of adjacent post.
- 9. Isolation joints shall be used where newly poured concrete abuts existing concrete or abuts to a different, non-yielding structure or material (e.g. buildings, or posts).
- 10. When using pneumatic nailing guns, the pneumatic equipment and equivalent nail sizes shall be approved by the NRCS engineer prior to use.

POST LAYOUT

REVISIONS			Drawing	No. 5 <i>31 – CAD</i>
DATE	APPROVED	TITLE	OH-N-3	53 1 —CAD
04/04	A.M. Brate	State Cons. Engineer		
06/15	B.D. Jordan	St. Cons. Eng. (Acting)	CI I	
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ETAIL

WALL



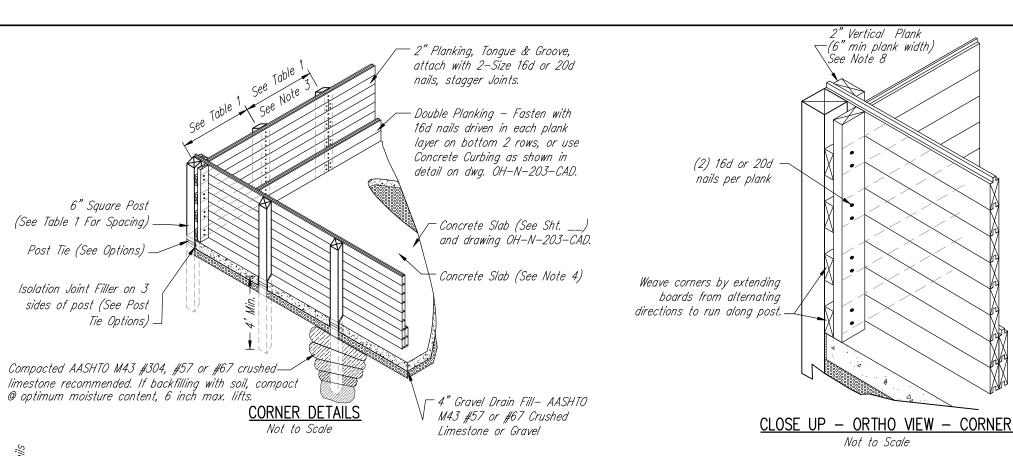


TABLE 1 — MAXIMUM WALL HEIGHT FACILITIES WITHOUT A ROOF		
MAXIMUM POST SPACING MAXIMUM WALL HEIGHT, h (FT.)		to Use:
Manure*	Compost*	(X)
<i>5.5</i>	5.5	
5.0		
4.5		
4.0	<i>5.5</i>	
	<i>5.5</i>	
2.5	4.5	
Manure*	Compost*	
4.7	5.5	
4.5	5.0	
4.0	5.0	
4.0	4.5	
3.5	4.5	
2.5	4.0	
	MAXIMUM WALL  Manure*  5.5  5.0  4.5  4.0  3.5  2.5  Manure*  4.7  4.5  4.0  3.5	HOUT A ROOF           MAXIMUM WALL HEIGHT, h (FT.)           Manure*         Compost*           5.5         5.5           5.0         5.5           4.5         5.5           4.0         5.5           3.5         5.5           2.5         4.5           Manure*         Compost*           4.7         5.5           4.5         5.0           4.0         4.5           3.5         4.5

\* Note: Manure loading = 60 lbs. / Cu.Ft. Compost loading = 35 lbs./Cu.Ft.

\* Note: For roofed structures, maximum wall heights are as follows:

	<u>Manure</u>	<u>Compost</u>
For roof spans <32'	4.5'	5.5
For roof spans >32'	4.0'	<i>5.0'</i>

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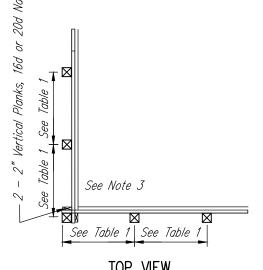
WALL

**PLANK** 

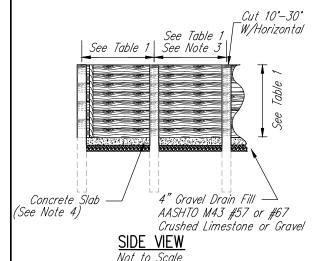
CLIENT:

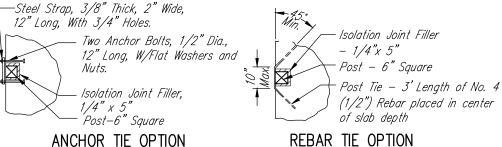
Of

United States Department or Agriculture



#### TOP VIEW Not to Scale





### REBAR TIE OPTION

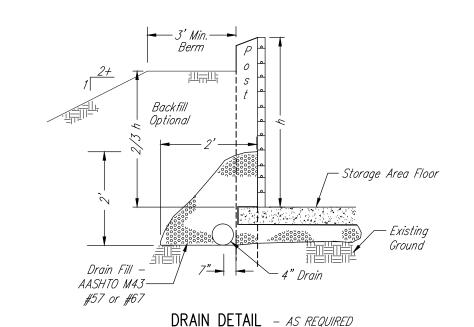
Post Tie Option is <u>not</u> required for roof-supporting posts.

# POST TIE OPTIONS

Not to Scale

### **CONSTRUCTION NOTES:**

- 1. All posts shall be grade stamped No. 2 or better (See Table 1), 0.6 Pounds per Cubic Foot retention Chromated Copper Arsenate (0.6 PCF CCA), Southern Yellow Pine (S.Y.P.). [All other lumber No. 2 or better, S.Y.P., 0.4 PCF CCA., and all fasteners shall be galvanized.
- 2. If any other ACQ or MCQ type Preservative Treatment is used, then retention rates shall be the equivalent as for CCA, but all fasteners shall be hot dipped galvanized or stainless steel.
- 3. Table 1 is for solid tongue and groove plank walls, manure loading at 60 PCF and compost at 35 PCF. Any changes must be approved by the State Conservation Engineer.
- 4. See NRCS "Concrete" Construction Specification, 210-VI-Engineering Field Handbook, Exhibit 0H17-1 for concrete slab requirements.
- 5. Maximum inside height of wall shall be 5.5 feet. Back fill optional, maximum height = 2/3h.
- 6. Post ties are not required when back filling to 2/3 the wall height, h. Post ties are required on all wall posts, included corner posts.
- 7. All plank joints shall be 2" nominal thickness, stagger joints.
- 8. For corner assembly, saw tongue off horizontal planks to merge at post. Vertical plank width shall match width dimension of adjacent post.
- 9. Isolation joints shall be used where newly poured concrete abuts existing concrete or abuts to a different, non-yielding structure or material (e.g. buildings, or posts).
- 10. When using pneumatic nailing guns, the pneumatic equipment and equivalent nail sizes shall be approved by the NRCS engineer prior to use.



Not to Scale

Drawing No. DH-N-531-CAD REVISIONS DATE APPROVED 04/04 A.M. Brate State Cons. Engineer St. Cons. Eng. (Acting

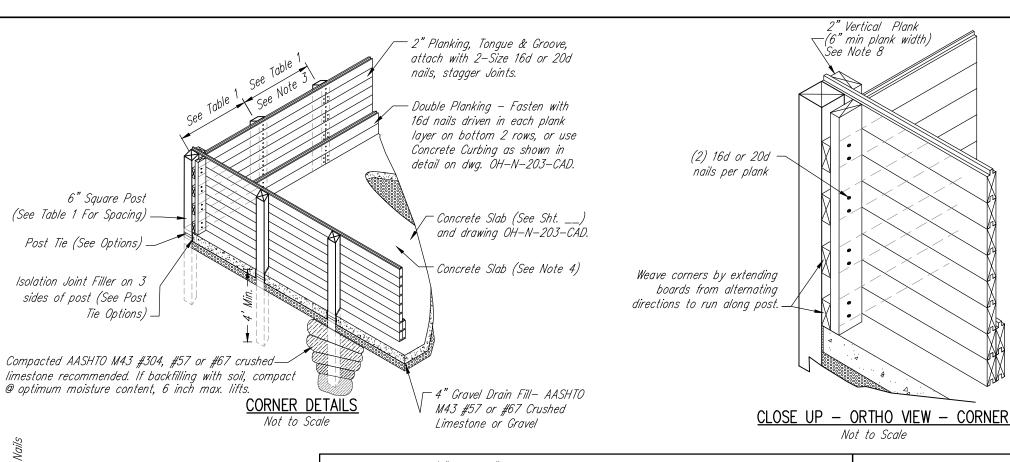


TABLE 1 — MAXIMUM WALL HEIGHT FACILITIES WITHOUT A ROOF			Select Scenario
MAXIMUM POST SPACING	MAXIMUM POST SPACING MAXIMUM WALL HEIGHT, h (FT.)		
6"x 6" No. 1 & 6"x 8" No. 2	Manure*	Compost*	(X)
2.5	5.5	<i>5.5</i>	
3.0	5.0	5.5	
4.0	4.5	5.5	
<i>4.5</i>	4.0	5.5	
<i>5.0</i>	3.5	5.5	
6.0	2.5	4.5	
6" x 6" No. 2	Manure*	Compost*	
2.5	4.7	5.5	
3.5	4.5	5.0	
4.0	4.0	5.0	
4.5	4.0	4.5	
5.0	3.5	4.5	
6.0	2.5	4.0	

\* Note: Manure loading = 60 lbs. / Cu.Ft. Compost loading = 35 lbs./Cu.Ft.

\* Note: For roofed structures, maximum wall heights are as follows:

<u>Compost</u> <u>Manure</u> 4.5' 5.5'

Drawn

ETAIL

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WALL

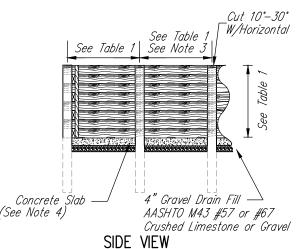
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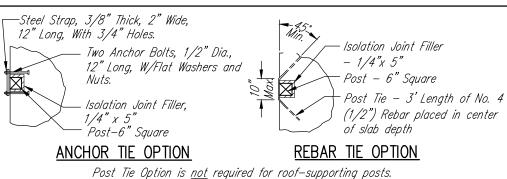
For roof spans <32' 5.0' For roof spans >32'

20*d* i Planks, Vertical - 🛛 2," See Note 3 See Table 1 | See Table 1 TOP VIEW

Not to Scale



Not to Scale



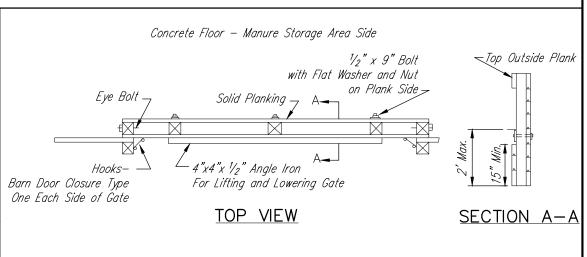
#### POST TIE OPTIONS Not to Scale

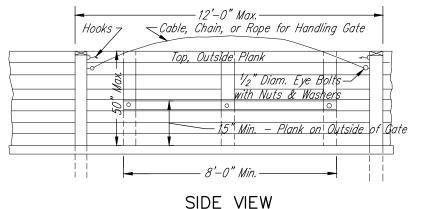
#### **CONSTRUCTION NOTES:**

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- 5. Maximum inside height of wall shall be 5.5 feet. Back fill optional, maximum height = 2/3h.
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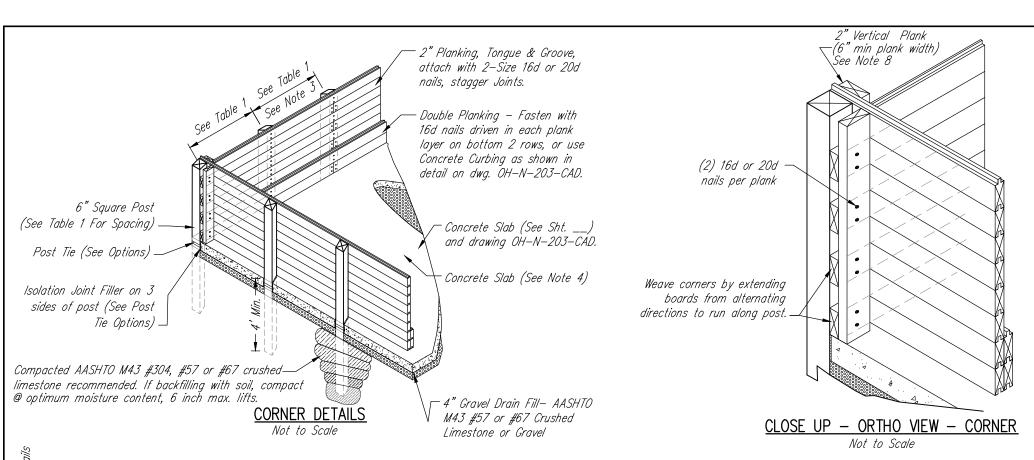
END VIEW

Filler Plani

REVISIONS Drawing No. DH-N-531-CAD State Cons. Engineer

REMOVABLE GATE - AS REQUIRED

DATE APPROVED 04/04 A.M. Brate St. Cons. Eng. (Acting



I .	TABLE 1 — MAXIMUM WALL HEIGHT FACILITIES WITHOUT A ROOF		
MAXIMUM POST SPACING	MAXIMUM POST SPACING MAXIMUM WALL HEIGHT, h (FT.)		
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4.0	4.5	5.5	
4.5	4.0	5.5	
5.0	3.5	5.5	
6.0	2.5	4.5	
6" x 6" No. 2	Manure*	Compost*	
2.5	4.7	<i>5.5</i>	
3.5	4.5	5.0	
4.0	4.0	5.0	
4.5	4.0	4.5	
5.0	3.5	4.5	
6.0	2.5	4.0	

- \* Note: Manure loading = 60 lbs. / Cu.Ft. Compost loading = 35 lbs./Cu.Ft.
- \* Note: For roofed structures, maximum wall heights are as follows:

<u>Compost</u> <u>Manure</u> 4.5' 5.5' For roof spans <32' 5.0' For roof spans >32'

-Steel Strap, 3/8" Thick, 2" Wide, 12" Long, With 3/4" Holes. Two Anchor Bolts, 1/2" Dia.,

> Isolation Joint Filler. 1/4" x 5" Post-6" Square

ANCHOR TIE OPTION

12" Long, W/Flat Washers and

Isolation Joint Filler -1/4"x5"Post - 6" Square Post Tie - 3' Length of No. 4 (1/2") Rebar placed in center of slab depth

## REBAR TIE OPTION

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# POST TIE OPTIONS

Not to Scale

## **CONSTRUCTION NOTES:**

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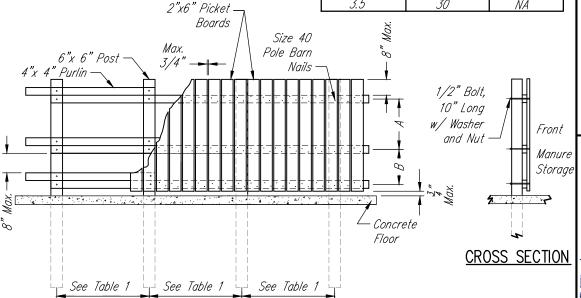
Notes: See Table at right for Wall Height and Maximum Purlin Spacings. Any changes must be approved by the State Conservation Engineer. Fasten Planks w/(6) Size 40 (5"Length) Pole Barn Nails.

FRONT VIEW

PICKET WALL DETAIL

TADLE - WAANWOW TONLIN			
SPACING			
WALL HEIGHT	MAX. PURLI	N SPACING	
Max. h (FT.)	(IN.)		
	А	В	
<i>5.5</i>	30	20	
4.5	24	20	
3.5	30	NA	

TARIF - MAYIMIM PURIN



Note: All Purlin Joints Shall be Overlapped by One Post Spacing.

Drawing No. DH-N-531-CAD REVISIONS DATE APPROVED 04/04 A.M. Brate State Cons. Engineer St. Cons. Eng. (Acting

Drawn

ETAIL

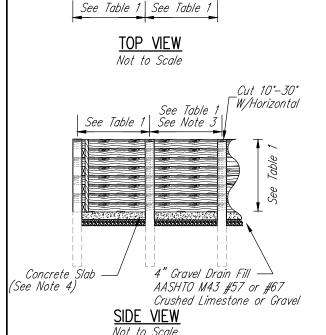
WALL

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Planks,

Vertical

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See Note 3